

Sub B3 8. (Amended) A method of producing a semiconductor wafer, comprising the steps of:  
producing a single crystalline semiconductor ingot by removing an OiSF ring by  
means of moving the OiSF ring from a center of a single crystalline semiconductor growth axis to a  
circumference and by extending a first area and a second area in which delta (O<sub>i</sub>) as oxygen  
concentration difference between initial oxygen concentration and oxygen concentration after heat  
A2 treatment in N<sub>2</sub> ambience at 1000 °C for 64 hours, is increased more than other areas;  
providing a wafer by slicing the single crystalline semiconductor ingot;  
carrying out a heat treatment on the wafer at a temperature equal to or higher than  
1200 °C; and  
carrying out a rapid thermal annealing on the wafer at a temperature equal to or  
lower than 800°C for a period having a duration of two minutes or less.

Sub B4 17. (Amended) A method of growing an ingot, comprising the steps of:  
accelerating a speed of growing from a melt-down silicon to a single crystalline  
A3 silicon ingot;  
maintaining a temperature gradient distribution from a central part to a  
circumferential part of the ingot at a growing interface between the melt-down silicon and the ingot  
grown by crystallization;  
forming an OiSF ring at the circumferential part by moving the OiSF ring from a  
center of a single crystalline semiconductor growth axis to a circumference; and

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extending an area in which delta ( $O_i$ ) is increased as compared to that of other areas, wherein the delta ( $O_i$ ) is a difference between an initial oxygen concentration and oxygen concentration after heat treatment with a thermal history.

18. (Amended) The method of growing an ingot according to claim 17, wherein the heat treatment with the thermal history is carried out at 1000°C for 64 hours in a  $N_2$  ambience.

19. (Amended) The method of growing an ingot according to claim 17, wherein the area in which delta ( $O_i$ ) is increased is formed to occupy 20 to 90% of a diameter of the ingot.

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